EASYGO ITN

Given the challenges in geothermal operations and the ambitious expansion plans for geothermal energy in many countries, there is an urgent need to address the key question **- How geothermal systems can be operated in the most efficient and safe manner?**

Within the ITN EASYGO, funded by the European Commission, the IDEA League universities ETH Zurich (ETH), RWTH Aachen University (RWTH), TU Delft (TUD) and Politecnico di Milano (PoliMi) and 12 industry partners address this question from different perspectives, integrating geology, geophysics, geochemistry, advanced modeling and process engineering. In this framework, EASYGO is looking forward to training tomorrow's leading geothermal energy experts.

EASYGO is an

IDEA League **initiative**

https://easygo-itn.eu

To know more about our activities and progress, follow us on

Interested in collaborating with us? Contact mbrehme@ethz.ch or pardeb@ethz.ch

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956965.

EASYGO ITN

Efficiency & Safety in Geothermal Operations

Innovative Training Network (ITN) within the Marie Skłodowska-Curie Actions (MSCA).

The first Doctoral School on Geothermal Energy with Joint European Degrees

ETH zürich

RWTH AACHEN UNIVERSITY

TU Delft

POLITECNICO MILANO 1863

SCAN ME

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Industry partners

VEEGEO Sproule Geothermal

ebn

GEO ENERGIE SUISSE

nagra.

Fraunhofer IEG

Hydreco Geomec

GEOPHYSICA Beratungsgesellschaft mbH

clean energy ahead TURBODEN

LU-VE EXCHANGERS

RWE

Ad Terra ENERGY

Huisman

EASYGO ITN

What do we do?

Geothermal energy provides base-load heat and/or electricity and is a primary energy resource for a sustainable future. The 13 sub-projects of this research programme cover the whole chain of geothermal operations. Specific research topics are:

- optimised representation of reservoir heterogeneity
- reservoir management including upscaling of laboratory-scale measurements to reservoir scale
- near-borehole and in-borehole coupled processes
- power-plant component optimisation
- optimised injection strategies including alternative fluid, e.g. CO2
- geophysical-geochemical monitoring during operations

Why do we do?

- To generate real-scale field data in an operational environment
- To develop new monitoring strategies and sensors that can be integrated in the casing
- To invent novel materials for casing and power plant components
- To test different fluid mixtures at subsurface and surface
- To acquire new data and combine methods to better define subsurface heterogeneity
- To explore novel techniques to predict stress changes in the reservoir

How do we do?

- Advanced and integrated monitoring concepts – to observe and measure processes in the subsurface prior to and during decades of operation
- Coupled real-time simulations of subsurface processes – to systematically investigate relationships between reservoir features and heterogeneities
- Development of system components for energy conversion – to optimise system performance by assessing operating conditions and adapting component design
- Assessment and testing of novel concepts for design and operation of geothermal systems – to broaden geothermal energy supply options and enhance flexibility and efficiency
- Testing of operation parameters at the real scale – to validate models, improved design and components

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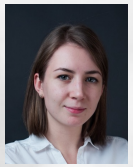
Who we are?

Principal Investigator - Dr. Maren Brehme
Senior Scientist, ETH Zurich

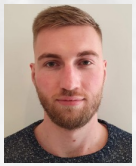
Project Manager - Dr. Paromita Deb
Research Scientist, ETH Zurich

The EASYGO Innovative Training Network is the first standardized doctoral education program in Europe. It brings together four of the IDEA League partners and forms a strategic alliance with ten industry partners in geothermal sector to train 13 MSCA ITN scholars. The main research question is -

How to explore geothermal systems in the most efficient and safe manner?



Anna Kottsova
ETH Zurich



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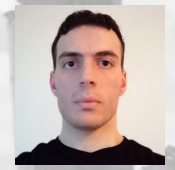

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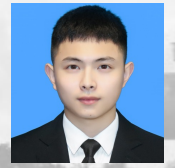

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